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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : William H. Shepard et al. Art Unit : 1771
Serial No. : 09/322,663 Examiner : J. Befumo
Filed : May 28, 1999
Title : LOOP MATERIAL ON SUBSTRATES

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DECLARATION OF WILLIAM H. SHEPARD UNDER 37 C.F.R. § 1.132

I, William H. Shepard, of 7 Highland Drive, Amherst, New Hampshire, declare that the following are true:

1. I hold a Bachelors Degree in Applied Physics from Marietta College. The curriculum included general study of the properties of materials.
2. I have been an employee of Velcro Group Corporation, Manchester, NH, an affiliate of the assignee of the subject patent application, for the past seven years. I am presently Manager, Packaging Development. Previously I held the position of Packaging Engineer for Velcro Group Corporation, in which I had responsibility for packaging of products sold by Velcro USA, and for developing disposable hook and loop closure products for the packaging industry.
3. Previous to my employment by Velcro Group Corporation, I was employed for 12 years by Nashua Corporation, Nashua, NH, manufacturer of printing and imaging products, including paper and other printable products, and dry and liquid toner for electrostatic printing, as well as computer products. With Nashua Corporation I held various positions relating to packaging and printing of packaging for products sold by that company, including posts as staff engineer, project engineer and Engineering Group Leader for computer products division, then packaging engineer for dry toner division and then Corporate Packaging Engineer, all divisions. In my various roles at Nashua Corporation I became widely knowledgeable about commercial printing techniques, their capabilities and requirements for printing on materials. I was also knowledgeable about the products sold by the Nashua Corporation and their uses.
4. I am an inventor, jointly with Paul Erikson, of a principal cited reference, Shepard et al. WO 99/11452, "Loop Material, Its Manufacture and Its Use In Products" corresponding to Shepard et al. U.S. Patent 6,329,016, "Loop Material For Touch Fastening". Its parent is U.S.

Patent 6,342,285 entitled "Fastener Loop Material, Its Manufacture, and Products Incorporating the Material".

5. I am an inventor, jointly with George Provost, of the present application U.S. Serial No. 09/322,663.

6. I have reviewed the file history of the subject application, including the first USPTO action on the merits, dated November 7, 2001, Applicants' response dated April 8, 2002, the further USPTO action dated June 28, 2002, the response submitted August 28, 2002, the USPTO Advisory Action dated September 26, 2002, the response filed December 30, 2002, and the claims now pending. I have also reviewed the additional claims 99-109 contained in the Supplemental Response, being filed, Appendix I to this declaration. I mean to include the claims of this supplemental response in any reference made here to "the pending claims".

7. I also have reviewed the references relied upon by the examiner, in her office actions dated November 7, 2001 and June 28, 2002, specifically:

Lemelson et al. (3,857,566)
Powell (5,603,504)
Bricker (5,664,780)
Lawless (5,891,547)
Nemec et al. (6,010,387)
Shepard et al. WO 99/11452 (U.S. 6,329,016)

8. I concur with the arguments contained in the "Remarks" presented on behalf of Mr. Erikson and myself on April 8, 2002, August 28, 2002 and December 30, 2002, as applied to the pending claims. As one skilled in the art, in my opinion none of the references of record, taken alone, or any combination of them, fairly teaches the products as defined in the pending claims, as I will explain. With respect to the advisory action, I note that the pending claims are now commensurate with the arguments being advanced. My present declaration is submitted to provide further evidence of unobviousness of the pending claims.

9. I have reviewed the Examiner's "Response to Arguments", dated June 28, 2002, and wish to address the examiner's statement:

"[T]he fact that a patent fails to explicitly teach or suggest an obvious variation is not the standard applied [to] applications to determine if the claims are patentable. In other words, just because the inventor did not think of, or disclose a specific variation does not imply that variation would not be obvious to one of ordinary skill in the art. The standard for obviousness, is based on the

knowledge of one of ordinary skill in the art at the time of the invention. In this case, as shown by the prior art of record, it is known to apply graphic images to loop materials. Thus, the rejections are maintained."

Likewise, I refer to the recent Advisory Action, in which, apparently for lack of consistency between the claims and the argument, the examiner has maintained rejection based upon the far different "silk screen" printing on pile fabrics.

10. To the extent the Examiner may consider that these statements still apply to the present claims, I feel the examiner will have overlooked or not fully understood important aspects of the situation.

11. The present claims concern the realization and discovery that ultra-low weight hook-engageable material (i.e. hook-engageable materials having basis weight less than about 4 ounces per square yard and lighter), can be printed directly with all or part of a useful graphic image, while the part of the ultra-low weight material that has been printed on, itself, continue to serve as a hook-engageable surface, and this is so whether this material be laminated to a supporting substrate, or be standing alone.

12. Illustrations of such a product are the free hanging banner of Fig. 11 and the novel lamination on paper that forms the attractive or informative feature of a point of purchase display for goods attached by hook and loop engagement, Fig. 1.

13. As is well known, a hook-engageable loop material is not an ordinary material. It must have a 3-dimensional characteristic on its working face, i.e. it must have upstanding loops of fibers that are sufficiently high and exposed as to be engageable by hooks of a matching fastener component when the field of hooks is pressed into face-to-face contact with the array of upstanding loops. Also, in order to serve as a fastener component, the fibers or yarns that constitute these "loops" must be bound to the ground or base of the fabric to secure the loops against pull-out. Classically, to serve as an effective fastener component, hook-engageable materials have been constructed with substantial mass and strength. Pile and felt fabrics of the cited prior art are examples. "Pile" and "felt" fabrics have relatively dense plush, carpet being an example of a pile, a man's hat being an example of a felt.

14. I consider it to be a rather remarkable accomplishment to have developed ultra-low weight (hence low-cost) materials that can function as effective hook-engageable loop

materials for fastening. This is bringing hook and loop fastening to practicality for low cost environments such as disposable wrapping and packaging and inexpensive displays.

15. My co-worker, George A. Provost, and I, at Velcro Group Corporation, before making the present invention, were well aware of the existence of ultra-low weight hook-engageable loop material, per se. As previously noted, Mr. Erikson and I invented the successful ultra-low weight material of cited Shepard et al WO 99/11452. But the disclosure of that published application, and its parent U.S. Patents 6,329,016 and 6,342,285, will be searched in vain for teaching the practical printability of the present invention.

16. At the time of making the invention of prior WO 99/11452, I was a packaging professional with many years' experience in printing. I had and still do have an abiding interest in the physical characteristics of new materials and am aware of the demands for packaging and presentation materials. Further, as an employee of Velcro Group Corporation, I was well acquainted with conventional hook-engageable pile materials. Such materials were a main-stay product of Velcro USA. I was aware that visual images have been printed on conventional, pile loop fabrics and cloths, printed typically by rotary screen printing that uses heavy viscous inks. On textiles, such printing is used because of the inherent variations of textile surfaces and their high effective surface area. The viscous inks, when applied to hook-engageable pile and the like, would typically tend to deaden or completely obliterate the hook-engageability of the loops covered by the ink.

17. At the time of being a joint inventor of WO 99/11452, I was interested in bringing attention in the patent application to the properties and capabilities of the new ultra-low weight loop material and, in particular, properties related to marketing and visual concerns. This interest is reflected in my observation, page 14, line 24, "In between knots, the thin fiber mat is not very dense and is sheer enough to permit images to be readily seen through it", this material having "ultra-thin ground portion 16...", page 19, line 4 of WO 99/11452.

18. While I was well aware of all the background described above, I, at the time of making the earlier invention of WO 99/11452, was not in possession of the invention of the present claims.

19. The examiner seems to suggest that the practical contribution of the present invention would immediately have been obvious in light of WO 99/11452 to any ordinary person

having knowledge of "silk screen" pile printing on pile loop fabrics (i.e. to a person with background knowledge such as I possessed.) For instance, the Examiner has said "It would have been obvious to one having ordinary skill... to substitute the nonwoven loop material taught by Shepard et al for the loop material used in the display system taught by Nemec et al" page 5, office action of June 28, 2002. And [because graphic images have previously been applied to conventional hook-engageable pile, cloth or felt fabrics by screen printing, taught by other references cited by the Examiner] "it would have been obvious.... to apply a graphic image to the loop material on the display ...taught by Nemec et al," Examiner's statement, page 6, office action of June 28, 2002.

20. In actuality, practical printability of the ultra-low weight hook-engageable material was not obvious to me at the time of inventing WO 99/11452. Perhaps the Examiner will come to understand how this could be, if I refer to the unconventional nature of this ultra low-weight material. It is remarkably different from conventional hook-engageable piles or cloth because of its ultra-low weight and open 3-dimensional, hook-engageable character. Unlike conventional hook-engageable pile material, as mentioned, I observed from a sample of a preferred embodiment that "In between knots, the thin fiber mat is not very dense and is sheer enough to permit images to be readily seen through it", pg. 14, lines 2-4 of WO 99/11452.

21. In preparing the patent application on which WO 99/11452 is based, Mr. Erikson and I were truly interested in listing possible uses of our new ultra-low weight, hook-engageable material. We observed it would be useful as a loop material on bags and displays. We gave detailed description of a wide range of number of products using it, i.e. from boxes, to diapers, to surgical gowns, to air filters, etc., see original Figs. 7 of the cited reference. This range of examples shows that we were motivated to identify in the patent application the practical possibilities for our product, as we then perceived them.

22. But, despite my considerable printing knowledge, experience and interest at the time I participated in preparing the patent application on which cited WO 99/11452 is based, I did not possess the present invention. I did not assume, and one should not assume in regard to printing, that what could be done with conventional, thicker and denser hook-engageable piles, cloths or felts could also be done with very different, ultra-low weight, open, 3-dimensional hook-engageable material. In fact, as it turns out, the ultra-low weight material could not be

printed by the printing technique taught by the cited reference, i.e. printing on pile by rotary screen printing. Screen printing requires use of viscous inks. The present invention as now clarified in the claims, does not use that type of printing.

23. It was not until after the present co-inventor, Mr. Provost (a long-time employee and inventor of Velcro Group Corporation) and I thought to try printing and saw the results, that we realized that certain printing techniques, (flexographic print, dye sublimation print, electrostatic print, ink jet print, all of which characteristically employ thin fluids or fluid like materials), surprisingly can produce good practical printed effects on ultra-low weight hook-engageable materials. From the experimental results, we concluded that such a printed hook-engageable loop article can be useful. In preferred cases, we found we could print directly on the hook-engageable loop side of the open fabric as well as on its backside, and still not hinder the hook-engageability of the loops. We found dye-based print (i.e. using dyes which are soluble in the substance of the receiving material) to be preferred.

24. I submit, as Appendix A (corresponding to Appendix A of the response filed December 30, 2002), copies of two micro photographs of 66X magnification of the loop side (denoted "face side") and back side (denoted "binder side") of an ultra-low weight nonwoven hook-engageable loop material bearing printing. These photographs show a nonwoven material of the type described in the present application. It has been printed on its loop side by dye sublimation printing, i.e. the dye being applied in vapor form. For showing the print on the nonwoven material, the substrate to which the material may be laminated has been omitted from the sample photographed, thus the ultra-low weight loop material is photographed from back as well as from front. The particular material shown was formed generally in accordance with the description of the specification, pages 15-18, employing staple, crimped polyester fibers of 6 denier, which were first needled as a bat, and subsequently stretched and stabilized as described. The photographs shown were taken at a transition of black sublimation dye print to red sublimation dye print resultant from printing on the loop side of the material. Such printing is generally described on page 8, line 2; page 27, line 21; and pages 31-33 of the present specification.

25. The invention of revised claim 1 of the present application is a laminate comprised of a substrate and a layer of hook-engageable nonwoven material, while claim 90

concerns the same material per se (i.e., without being laminated to a substrate). In each case the material has a basis weight of less than about 4 ounces per square yard, the nonwoven being a stretched material, stabilized in its stretched condition in the manner that there are fibers or yarns of hook-engageable loop form on the surface (the "second" surface of the claims), and a distribution of straightened fibers in the material. A graphic design or image print lies at least partially upon the second surface of the nonwoven material, the print on the second surface being in the form of flexographic print, dye sublimation print, electrostatic print or ink-jet print, the print residing on both the fibers or yarns of hook-engageable loop form and on the straightened fibers of the nonwoven material, the fibers or yarns of hook-engageable loop form on which the print resides remaining effectively hook-engageable. In corresponding claims 99 and 102 of the supplemental response the print is required to be in the form of dye-based print.

For discussion in the specification, please see e.g. page 3 lines 9-15; page 8, lines 1-6; and Figure 3B and its related text, pages 15-18.

26. In Appendix A, with respect to these claims, attention is drawn to the very open, flimsy or lacy 3-dimensional nature of the hook-engageable loop fabric of this sample, characteristics that are reflective of its being of less than 4 ounce weight per square yard, of 6 denier yarn and having a 3-dimensional character that enables fibers to serve as hook-engageable loops. The gray background which shows extensively in the photographs is an aluminum sheet on which the fabric resided during photography. On the "face" or loop side of the fabric of Appendix A, i.e. the "second surface" of the claims, the protruding hook-engageable loops are seen, bearing the sublimation-printed dye. Some of the straightened fibers of the fiber mass, also bearing the printed dye, appear in the background. In the second photograph taken from the "binder" side ("first surface" according to the claims), straightened fibers, as a result of the stretching of the claim, are more prominently seen and also clearly bear the sublimation-printed dye. An inexpensive but fine-appearing dimensionally stable material is possible, capable of serving as decoration or as a visual display, the material also having the capability of being readily engaged by hook fasteners for the important advantages described in the specification.

27. None of the references of record, alone or taken together in any combination, would suggest to me the product of revised claim 1, new claims 90, 99 and 102.

28. In my view, the Shepard et al cited reference, understood against its background, would support patentability of claims 1, 90, 99 and 102, given that Mr. Erikson and I did not possess the invention at the time we invented and described the ultra-low weight material of the reference .

29. In my view, Ms. Lawless' efforts as reported in her U.S. Patent 5,891,547, stands as corroboration of unobviousness of these claims. As can be seen from her patent specification, Ms. Lawless set out, as Mr. Erikson and I had done, to achieve an ultra-low weight hook-engageable loop nonwoven material. Whereas her approach placed binder material in the hook and loop entanglement zone, (which makes me question the practical utility of that material as a hook-engageable fastener) Ms. Lawless reported some promise, in a fabric that also had a basis weight within the limit of present claims.

30. Her evaluation of the material, as reported at col. 4 of the cited Lawless reference, was "Fiber characteristics... influence the fabric's transparency... A clear loop component may add marketability... by allowing the consumer to see a printed film placed beneath the loop component." col. 4, lines 42-50, emphasis mine.

31. From this, Ms. Lawless shows her interest in visual marketing possibilities of her product. I consider this significant, when taken together with the Examiner's previous observation, that "Lawless fails to teach applying [sic, printing] a graphic image on the fabric itself," office action of June 28, 2002, page 9, line 6 from bottom.

32. Ms. Lawless, of well regarded Precision Fabrics Group Inc., showed her familiarity with conventional (pile) loop fabric materials at col. 1, lines 45-50 of cited Lawless reference. By her association with Precision Fabrics Group Inc., and as a professional in the field, (and probably along with others of company who authorized and prepared her patent application) she no doubt was aware that conventional relatively heavy weight pile, cloth and felt fabrics have been printed by screen printing. Against this background, even as the Examiner has said "Lawless fails to teach.... [printing] a graphic image" upon the material. Thus, despite her evident interest in bringing attention to visual effects and marketing concerns, col. 1, lines 45-50, Ms. Lawless, presumably as well as others involved in the preparing Patent Application for Precision Fabrics

Group Inc., evidenced no appreciation of the concept of present claims 1, 90, 99 and 102. For these reasons, I consider that the Lawless disclosure corroborates my view that the inventions of these claims were unobvious to skilled people.

33. I have reviewed the other references cited in the record and find that none concerns ultra-low weight, hook-engageable loop materials, and none teaches the claimed print on ultra-low weight hook-engageable materials.

34. Nemec et al, U.S. 6,010,387 discloses a display panel in which one of its coverings over corrugated polymeric board is a "hook or loop material." As the Examiner properly noted, p. 5 "Nemec et al. fails to teach applying [printing] graphic images to the loop material". The Examiner was also correct that "Nemec et al fails to teach the specific structure of the loop material applied to the display system", page 4. Certainly Nemec adds nothing over Shepard or Lawless in respect of the contribution of present claims 1, 90, 99 and 102.

35. Lemelson et al., U.S. 3,857,566 discloses a pile material 17 that has been brushed to form hook-like formations. Having the thickness of a pile, Lemelson is certainly not an ultra-low weight material. Besides that, Lemelson is concerned with a hook material, not a hook-engageable loop material. The Lemelson material is mounted to stretch across an open frame as a free span, in the nature of a drum head. "[T]he material is thus maintained by the frame a distance D away from... the rear face", col. 2, lines 37,38, so that "it may be substantially deformed... when a missile 22 [a dart] strikes...", col. 2, lines 45-47]. One can be sure the nylon pile of Lemelson was not "less than about 4 ounces per square yard", nor anywhere near being an ultra-low weight hook-engageable material. Regarding claims 1 and 99, neither was Lemelson's pile, a "laminate"; his teaching seems to be directly away from being so. Lemelson's "Printing" of lines, numbers and illustrations on pile, hook material, does not at all suggest the invention of present claims 1, 90, 99 and 102, which call for a nonwoven material having hook-engageable loops and basis weight of less than 4 ounces per square yard. I concur with the previous responses filed in this patent application, that Lemelson does not make up for the deficiencies in the teaching of Shepard et al, Lawless, and Nemec.

36. I have already noted in this statement that it was well known to print on conventional relatively heavy pile fabric using "silk screen" techniques. The Powell reference is along these lines. Powell, U.S. 5,603,504 teaches a hook-engageable target formed by a game

board of cloth (e.g. "felt") mounted on a wall by pins 16. "[I]ndicia lines [are] painted or silk screened" on the cloth, (paint and silk screen ink typically being quite viscous; screen printing ink often being pudding-like). This is no fair teaching of printing a hook-engageable nonwoven of basis weight less than about 4 ounces per square yard with the highly fluid printing materials involved with flexographic print, dye sublimation print, electrostatic print or ink jet print, or with dye-based print. In regard to claims 1, 90, 99 and 102, I consider that Powell adds nothing substantial over the teachings of the other references discussed.

37. Bricker, U.S. 5,664,780 has a display board on which an image is formed by "painting, laminating, silk screening and the like" and uses "magnetism attraction" [sic] for applying tokens to the board. Apparently the Examiner considered this reference relevant because of the statement, col.5 line 33 et seq., "Even though the preferred means of display board 10 to token 30 and 35 interaction is by magnetism, other attractive means such as VELCRO [sic, VELCRO brand] type loop-to-hook interactions, electrostatic interactions, frictional interaction, snap or hook mechanisms, tab and slot interactions and equivalent processes are within the realm of this disclosure." It is not clear from its disclosure whether Bricker's hook material or Bricker's loop material would be the material to be painted or printed; because of this ambiguity, it would seem not to be a fair teaching of the present invention for this reason alone. But, in any event, being filed in 1995, clearly the reference to "VELCRO" materials in this patent could only be referring to conventional loop materials commercially offered at the time, such as the relatively heavy pile loop fabrics; commercial loop fabrics at that time were not ultra-low weight loop materials, to which the present claims are solely directed.

38. The reference US. 5, 458,590, Schleinz, et al, newly cited by applicants, has to do with decorating the outside of a diaper. So far as I can see, it has no suggestion of a fabric having 3-dimensional or other qualities making it capable of hook engageability. The ability to print on something without hook engageability, where one does not have to be concerned about retaining 3-dimensional loft to enable the hooks to engage the web, does not, to me, suggest the subject of claims 1 and 90.

39. In summary, from the references, it seems the most that can be said is that (1) ultra-low weight loop materials, per se (of basis weight less than 4 ounces per square yard), having 3-dimensional openness so as to be hook-engageable, were in the prior art (this from the

joint invention of Mr. Erikson and me, and from Ms. Lawless), but their practical printability had not been recognized by people directly active in the field or any one else; (2) "silk screen" printing (typically requiring heavy, viscous pudding-like inks), is performed on conventional weight, much heavier, hook-engageable pile or cloth in the prior art (which, even in that context, typically rendered the loops printed upon, useless for hook engagement); (3) laminates with other materials of conventional, relatively heavy hook-engageable pile fabrics have been known; (4) the applicability of dye-based print, or flexographic, dye sublimation, electrostatic or ink-jet printing upon ultra-low weight hook-engageable loop material, has not been fairly taught.

40. When it comes to ultra-low weight hook-engageable loop material, (basis weight less than about 4 ounces per square yard), I find no prior art in the record that shows appreciation that such material can be practically, usefully printed, printed on the loop side or the backside without impairing hook engageability, to produce a practically useful product with flexographic print, dye sublimation print, electrostatic print or ink-jet print, or dye-based print.

I have discussed the two cited references, Lawless and Shepard et al., making the following points: (1) the inventors show no appreciation of the invention despite their focusing on the possibilities of decorative or visual effects and upon marketing advantages of the ultra-low weight hook-engageable loop products; (2) None of us suggested in our patents the technique which, if regarded to be practically possible, would ordinarily be the most common and desirable way to mention for achieving a visual effect, i.e. that of placing print upon the material itself; (3) The ultra low weight, open, 3-dimensional nature of the hook-engageable material itself created a special situation. In my opinion, as a person of skill in the art, the practical ability to place print usefully thereon, of the kind claimed, was not obvious to persons of ordinary skill in light of the cited references.

41. Furthermore, with specific reference to claim 1 as amended, and claims 90, 99 and 102, these claims are specific to the type of nonwoven that entails both loops and taut fibers. Taut fibers are not suggested by Lawless. As Appendix A shows, the print resides on both the loops and the taut fibers to good effect. No printing like that is shown or suggested in the references.

42. Admittedly it has been old to print on conventional loop materials such as pile materials or conventional cloth or felt using screen printing on the loop side of the materials.

The cited Powell reference teaches no more. In my opinion, if one tried to use screen printing on applicant's open, ultra-low weight, low-lying loop fabric, following Powell's teaching, the viscous screen print material, being of the approximate consistency normally, of chocolate pudding, and especially when applied to the loop side, would paste down the low-lying loops, destroy the required 3-dimensionality of the fabric, and render the material useless as a hook-engageable material.

43. The present claims 1 and 90 are limited to the print being in the form of flexographic print, dye sublimation print, electrostatic print or ink-jet print, and corresponding claims to dye-based print, which distinguish the screen printing of Powell and other's; all of Applicants' claims are limited to print types formed by thin fluids, i.e. low viscosity liquid ink, fluidized powder or vapor.

44. In my opinion, if one were to take the prior art teaching, and try, with screen printing ink, to print on either the loop side or the backside of the materials described in Shepard or Lawless, the hook-engageable functionality of the material would be lost. None of the other references discussed above has a teaching that alters this view of the subject of claims 1, 90, 99 and 102.

45. The reference U.S. 5,458,590, Schleinz, et al., newly cited by applicants, has to do with decorating the outside of a diaper. So far as I can see, it has no suggestion of a fabric having 3-dimensional, hook-engageable qualities. The ability to print on something without hook engageability, where one does not have to be concerned about retaining 3-dimensional loft to enable the hooks to engage the loops, does not, to me, suggest the subject of claims 1, 90, 99 and 102.

46. Coming now to claim 2, and claim 91, and corresponding claims 100 and 103, these are different from claim 1 in being limited to "super ultra-low weight " hook-engageable material, i.e. materials of weight less than about 2 ounces per square yard!! The claims require that the graphic design or image be imprinted on the hook-engageable loop side. As with claims 1 and 90, claims 2 and 91 require the print to be flexographic print, a sublimable dye print, an electrostatic print deposit or an ink-jet print, while claims 100 and 103 are limited to print in the form of dye-based print. (These claims are not limited to nonwoven composition of the material, thus e.g. covering also the knit materials mentioned in the specification.)

47. As discussed above, Powell's paint or pudding-like screened composition on the loop side of the fabric, if tried, would result in failure with the ultra-low weight material; with the material of claims 2, 91, 100 and 103 even more so, the loops would just be plastered down and rendered non-functional.

48. Claims 87, 92 and 104, directed to a stretched and stabilized ultra-low weight hook engageable material bearing one of the successful non-screen printing types of print discussed, includes the possibility of printing anywhere on the material. (A product printed on its back can be useful, as by being seen through the ultra-low weight material.) Because of the openness of the material, fluid printing material on the back makes its way to the front; if of high viscosity fluid, e.g. screen printing fluid, the fluid would paste down the upstanding hook-engageable fibers or loops. Again, I do not find what is to me a fair teaching of the products of claims 87, 92 and 104 in the records I have reviewed or any fair combination of their teachings.

49. Claims 87 and 101 are further directed to a specific laminate, i.e. a laminate with smooth or sheet paper. High quality characteristics are achievable by this simple but very inexpensive product, making it uniquely useful for visual displays and the like. Lawless' suggestion of a film laminate is not the same; the point being, on one hand, paper can be much less expensive than plastic film, and on the other hand, for many uses, paper has superior properties to plastic film such as printability and providing dimensional stability for applications such as the point of purchase displays of the present application. (Smooth paper sheet is more dimensionally stable in its plane than is ordinary plastic film). Because of dimensional stability a laminate of paper with the ultra-low weight loop material, the hook-engageable laminate can be manipulated as if it were paper, and thus be used as box linings, as pages in a scrap book, etc., with great ease, (see drawings in this application). Such a range of uses is not the case with a relatively limp nonwoven fabric or the a fabric laminated to ordinary plastic film.

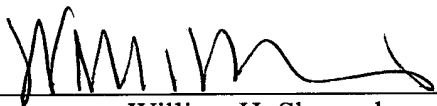
50. Regarding the remaining claims, of particular moment are the substantially varied area/density claims 6, 95, 105 and 7, 96, 108 (inexpensive fabrics that produce highly desirable appearance) and the dye limitation claims 11, 13, 14, 88 and 97, and the claims 99-109 (dyes entering the substance of the material printed upon are particularly favorable in maintaining hook-engageability and durability).

I have personally never heard of "dye silkscreen ink", a term mentioned in one of the office actions. "Silkscreen" ink is a thick pigment ink. The term "dye" when used in our patent application, is used in its common meaning, to refer to classical soluble dyes, not to screen printing compositions. Printing substances based on dyes have been found to form particularly effective printing on ultra-low weight hook-engageable material, an example being Appendix A.

51. In conclusion, viewing myself as a person skilled in the pertinent art, I consider that the invention of the present claims would not have been obvious to those of ordinary skill from the prior art references cited in this application.

I declare that all statements made herein of my own knowledge are true, and that all statements made on information and belief are believed to be true and, further, that these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. § 1001 and that such willful false statements may jeopardize the validity of this application or any patents issuing therefrom.

Signed at Manchester, New Hampshire this 12 day of February, 2003.



William H. Shepard

APPENDIX

TITLE: LOOP MATERIAL ON SUBSTRATES

APPLICANT: GEORGE A. PROVOST AND WILLIAM H. SHEPARD

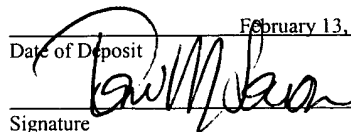
CERTIFICATE OF MAILING BY FIRST CLASS MAIL

I hereby certify under 37 CFR §1.8(a) that this correspondence is being deposited with the United States Postal Service as first class mail with sufficient postage on the date indicated below and is addressed to the Commissioner for Patents, Washington, D.C. 20231.

Date of Deposit

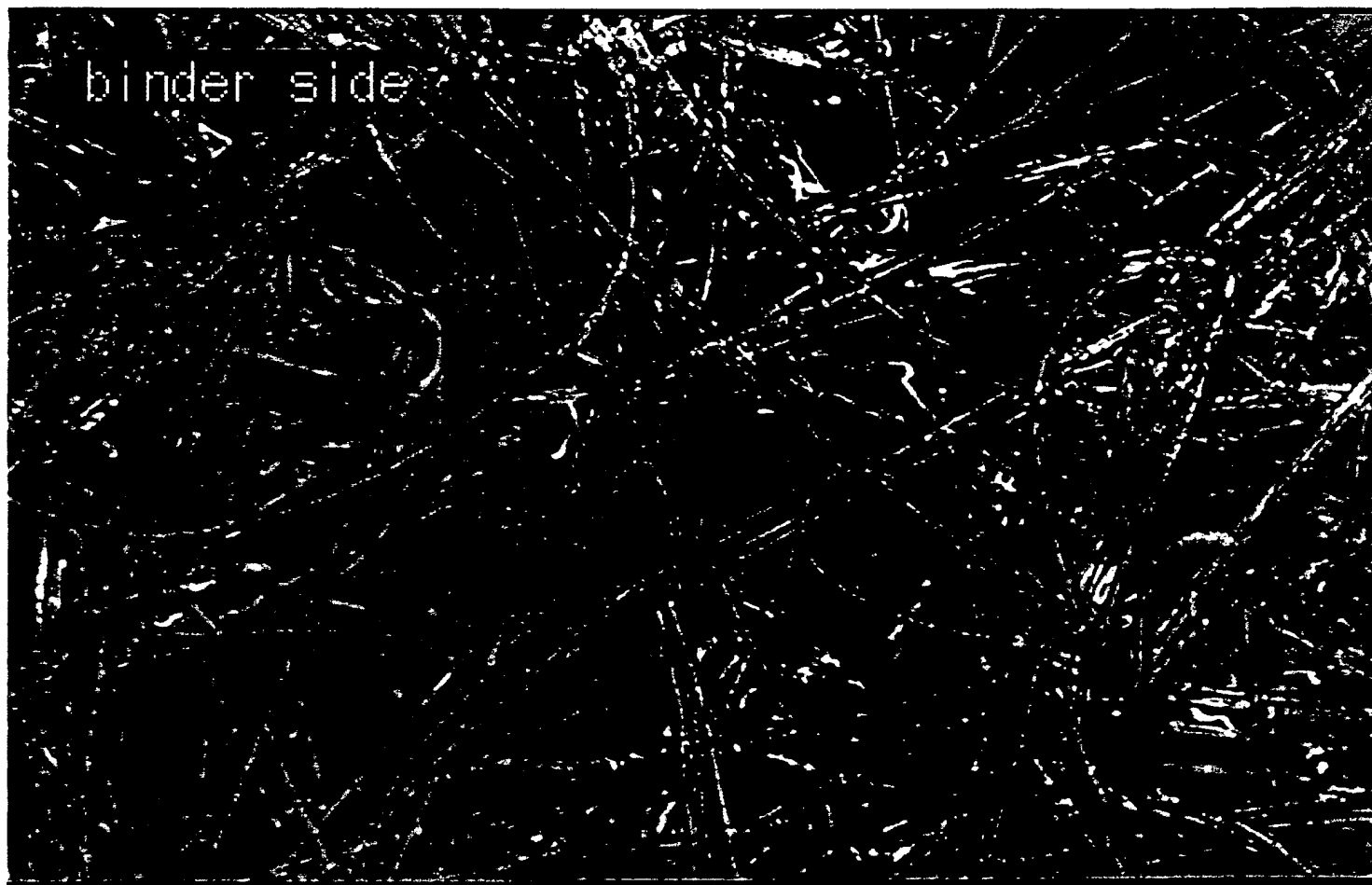
February 13, 2003

Signature

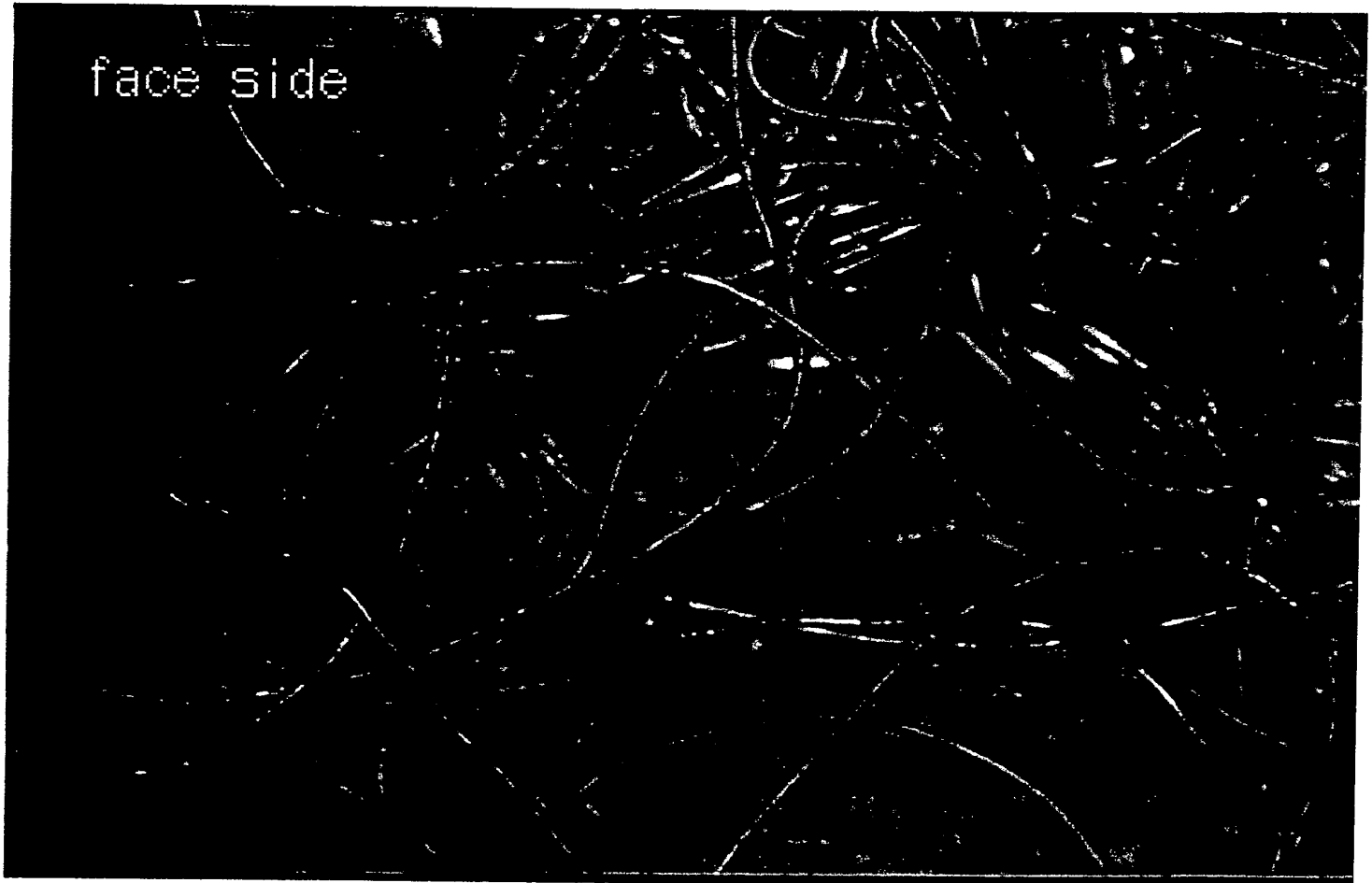


Toni M. Sousa

Typed or Printed Name of Person Signing Certificate



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